

Sunagocia sainsburyi, a new flathead fish (Scorpaeniformes: Platycephalidae) from northwestern Australia

Leslie W. Knapp and Hisashi Imamura

(LWK) Department of Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560-0159, U.S.A.; e-mail: knappl@si.edu;

(HI) Hokkaido University Museum, Faculty of Fisheries, Hokkaido University, 3-1-1 Minato-cho, Hakodate, Hokkaido 041-8611, Japan, e-mail: imamura@museum.hukudai.ac.jp

Abstract.—Based on two specimens taken by bottom trawl from northwestern Australia, *Sunagocia sainsburyi* differs from its congeners in having: 4–5 preorbital spines; 5 total gill rakers on first arch; a bony expansion of suborbital ridge base on cheek bearing 1–2 rows of small spines; and no papillae on upper surface of eye. It also tends to have more spines on the ethmoid and on the supraorbital and suborbital ridges. A table compares features of the new species to the other three species currently included in the genus *Sunagocia*.

Imamura (1996) erected the genus *Eurycephalus* for three species formerly placed in the genus *Thysanophrys* Ogilby, 1898; *E. arenicola* (Schultz, 1966), *E. carbunculus* (Valenciennes in Cuvier & Valenciennes, 1833), and *E. otaitensis* (Cuvier (ex Parkinson) in Cuvier & Valenciennes, 1829). The primary features distinguishing the new genus were: suborbital ridge bearing four or more distinct spines; iris lappet finger-like or branched; lateral-line scale pores with two openings posteriorly; and sensory tubules weakly developed or absent from the cheek region. Recently, Imamura

(2003) learned that the name *Eurycephalus* was preoccupied by the cerambycid beetle genus *Eurycephalus* Gray in Cuvier & Griffith, 1832 and proposed *Sunagocia* as a replacement name.

During the trawling surveys of northwestern Australia conducted by the F/V *Courageous* in 1978 and by the F/V *Soela* in 1980, two small specimens of an undescribed species of *Sunagocia* were taken. Comparisons of features distinguishing these specimens from the other three species of *Sunagocia* appear in Table 1. The two collections of the new species represent

Table 1.—Comparison of features in species of *Sunagocia* (value for paratype in parentheses).

Character	<i>arenicola</i> n = 20	<i>carbunculus</i> n = 8	<i>otaitensis</i> n = 21	<i>sainsburyi</i> n = 2
SL (mm)	37–135	70–116	83–159	86 (97)
Total gill-rakers	6	6–7	6–7	5
Preocular spines	1	1	1	5 (4)
Preorbital spines	0, rarely 1–2	1, rarely 2	0, rarely 1	4
Maxilla reaches to	just past front of	anterior ¼ of eye	just past front of	mid-eye
	eye		eye	
Ocular flaps	absent	present	absent	absent
Labial papillae	absent	absent	present	absent
Suborbital ridge upper base	smooth, scaled	smooth, scaled	smooth, scaled	bony expansion with 1–2 rows of small spines

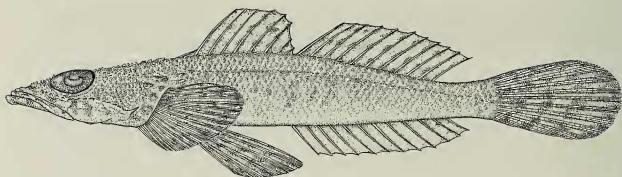
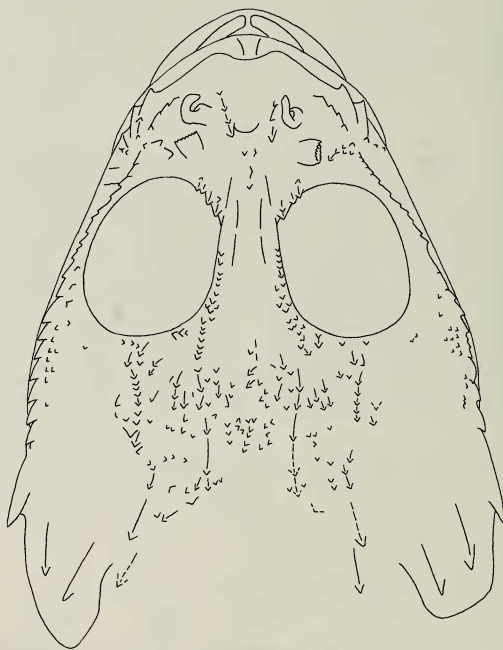


Fig. 1. Paratype of *Sunagocia sainsburyi*, CSIRO H 5856-01, Northern Australia, 97 mm SL.



10 mm

Fig. 2. Cranial spines of holotype of *Sunagocia sainsburyi*, WAM 26230-007.

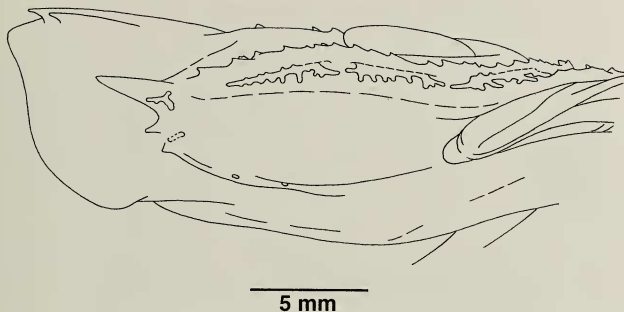


Fig. 3. Head of holotype of *Sunagocia sainsburyi*, right side, showing lack of sensory tubules on cheek below suborbital ridge.

the first records of the genus taken with trawling gear, the other species having typically been taken with rotenone and SCU-BA.

Methods

Counts and measurements were taken according to Hubbs & Lagler (1949). Measurements were made with calipers and rounded to the nearest mm. Vertebrae were counted from radiographs. Terminology of head spines follows Knapp et al. (2000). In-

stitutional acronyms follow Leviton et al. (1985) except for South African Institute for Aquatic Biodiversity (SAIAB), formerly RUSI. Standard length and head length are abbreviated as SL and HL, and lateral-line as LL.

Sunagocia sainsburyi, new species

Sainsbury's flathead

Fig. 1

Holotype.—WAM 26230-007, 86 mm SL, Western Australia, 125 km NE of Port Hedlund, 19°07'S, 119°25'E, F.V. *Courageous*, 28 May 1978, 73–74 m, K. Sainsbury et al.

Paratype.—CSIRO H 5856-01, 97 mm, Northern Australia, near Darwin, 11°53'S 131°15'E, F.V. *Soela*, Cr. 5, Sta. 49, 6 July 1980, trawl, 20–22 m.

Other material examined.—*Sunagocia arenicola*, USNM 362804 (12, 37–117 mm), Western Indian Ocean, Amirantes Is., D'Arros I., R/V *Anton Bruun* Cr. 9, 5°24'S, 53°13'E, 8 Dec. 1964, rotenone, 4–8 m, RS-40, R. D. Suttkus et al.; SAIAB 8219 (8, 46–131), Mozambique, Pinda Reef, Bay of Bocage, 14°10'S, Sept. 1956, M. M. Smith. *S. carbunculus*, USNM 99703 (8,

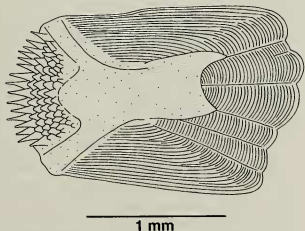
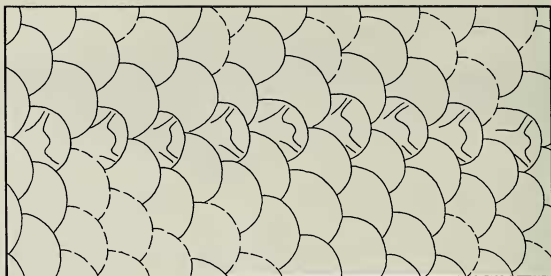


Fig. 4. LL scale, circa 22nd scale from right side of holotype of *Sunagocia sainsburyi*.



3 mm

Fig. 5. Area around LL scales 19–27, right side of holotype of *Sunagocia sainsburyi*.

70–116), Malaysia, Sabah, North Borneo, Sandakan Bay, 2 Mar. 1908, U.S. Fisheries Steamer *Albatross*, seine. *S. otaitensis*, USNM 366402 (6, 106–151), Northern Philippines, Babuyan Is., Fuga I., circa 18°51'N 121°22'E, coral and tide pools, 11 Mar. 1990, rotenone, A. Ross; USNM 366403 (5, 83–159), Central Philippines, Negros, Apo I., 9°4.5'N 123°16.4'E, 18 May 1979, LK 79-20, rotenone, 0–2.4 m, L. W. Knapp et al.; ROM 42303 (10, 37–80) Indian Ocean, Chagos Arch., Peros Banhos, Isle du Coin, 5°26'21"S 71°46'52"E, 6 Feb. 1979, WE 79-06, rotenone, 0–7 m, R. Winterbottom et al.



3 mm

Fig. 6. Sketch of iris lappet from right eye of holotype of *Sunagocia sainsburyi*.

Diagnosis.—A species of *Sunagocia* with 4–5 preorbital spines; 5 total gill rakers on the first arch; a bony expansion of the suborbital ridge upper base on cheek bearing 1–2 rows of small spines; maxilla reaching to below middle of eye; no papillae on upper surface of eye; a series of spines on the ethmoid and several pairs of nasal spines (Fig. 2); and smaller, more numerous spines on the supraorbital and suborbital ridges. Sensory tubules are absent from the cheek area below the suborbital ridge (Fig. 3).

Description.—Data for holotype given, followed by that of paratype in parentheses when differing. Dorsal-fin damaged in holotype, last 1–2 spines missing, VII(IX), 11; anal-fin rays 12; pectoral-fin rays 2 unbranched + 14 branched + 3 unbranched (2+13+4) = 19; pelvic fin with 1 spine and 5 rays, innermost is unbranched; caudal-fin branched rays 8; vertebrae 27; total gill rakers on first arch 5; pored scales in LL 52, anterior 3 scales bearing a small spine; 6 rows of scales between 2nd dorsal fin origin and LL. Number of oblique scale rows above LL about equal to number of LL scales. LL

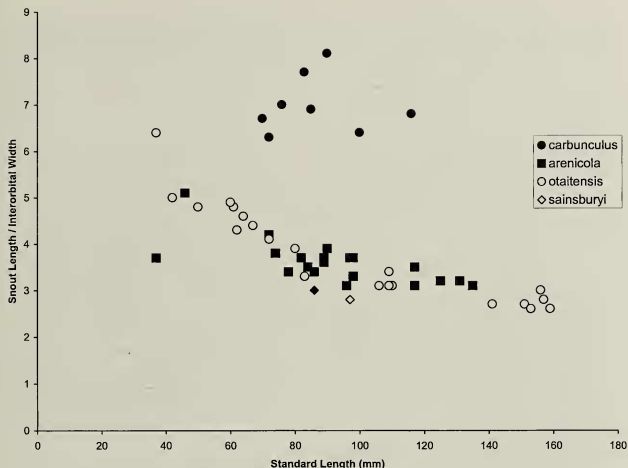


Fig. 7. Ratios of least interorbital width into snout length for the four species of *Sunagocia* (*S. sainsburyi* holotype, solid diamond).

scale pores with two openings to the exterior (Fig. 4). Relationship of LL scales to adjacent scale rows is shown in Fig. 5. Iris lappet bears short branches with bifurcate tips (Fig. 6). Lip margins without papillae.

Body depressed, upper body covered with ctenoid scales, breast scales largely cycloid. Interopercular flap lacking. HL 2.8 (2.9) in SL; orbit going 1.1 times in snout. Ratios of least interorbital width into snout length for the four species of *Sunagocia* appear in Fig. 7. Villiform teeth in bands on jaws and palatines, in two separate patches on vomer.

Top and sides of head armed with numerous spines (Fig. 2). Preopercular spines 3, uppermost longest, not bearing an accessory spine on base; a pair of stout nasal spines, with 2–3 smaller spines running anteriorly to each; base of opercular spines

covered by scales, not bearing serrae. Suborbital ridge with about 17–20 serrae.

Color observations were taken on the paratype after it thawed, prior to preservation. Dorsum brownish, with about six darker bands crossing back, venter whitish. Two brown infraorbital bands and two brown suborbital bands present. Cheek below suborbital ridge with a series of brown blotches. A brown band angling back from anterior ethmoid to front of eye. Dorsal-fin spines and rays bearing small dark spots; pectoral fin with several vertical brownish bands above, clear below; pelvic fin with four reddish-brown bands; and caudal fin with about four vertical dark brown bands.

Etymology.—The species is named in honor of Keith J. Sainsbury, collector of the holotype and other flatheads later during the F.V. *Soela* cruises.

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